



Tennessee Breastfeeding Hotline FY16 Annual Report

Submitted to:

State of Tennessee, Department of Health

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July 29, 2016



Executive Summary

Year 3: July 2015 to June 2016

The Tennessee Breastfeeding Hotline (TBH) is a telephonic breastfeeding support program that is free to nursing mothers, their families and partners, expectant parents, and to health care providers. Participants who call the Tennessee Breastfeeding Hotline speak with a certified lactation professional who collects the mother's and baby's information using self-reporting techniques. This information is gathered for the purpose of making assessments, attending to the client's individual needs, referring the client to available resources and ensuring that the lactation professional is able to follow-up with the client.

Lactation professionals offer strategies to empower clients to breastfeed, identify barriers to successful breastfeeding, and provide techniques to cope with and overcome barriers to breastfeeding. Participants receive individualized counseling for common breastfeeding issues. If the caller's issues are beyond the scope of the lactation professional's expertise, or require treatment, the mother is directed to a health care provider or an outside agency better able to offer the necessary support. Some participants receive a 24 hour follow-up call, if the caller's situation requires additional support and encouragement.

The measurement period for this report is Year 3, covering July 2015 to June 2016. Lactation professionals collected quantitative data through the use of a conditional questioning workflow. These workflow data analyzed characteristics such as breastfeeding trends, call volume and repetition, and patterns in caller's age, race, and ethnicity. After the initial call, TBH also conducts follow-up calls that occur at 4, 8, and 12 weeks to assess self-reported outcomes and client satisfaction with services. Over the course of the measurement period, these data are collected to aid in the construction of a continuous quality improvement plan, vital in ensuring the sustainability and productiveness of the TBH.

Participants receive follow-up calls at 4, 8 and 12 weeks for two purposes. First, it is to encourage the women to continue breastfeeding. In Tennessee, the percentage of breastfed infants that were supplemented with formula before three months was 26.5%.¹ During Year 3, there were a total of 5,722 calls to the TBH. When asked about intention to continue breastfeeding, 97.7% responded that they intended to continue breastfeeding (pg. 22, Table 14A). At 4-week follow-up, 86.8% of the moms reached were still breastfeeding (pg. 23, Table 14B).

The second purpose of the three follow-up calls is to acquire necessary information used to determine the effectiveness and quality of the program from the viewpoint of the user. For each follow-up call, clients are asked to rate overall services received from the TBH. During Year 3, 99.2% of the callers at the 4-week follow-up and 99.8% of callers at the 8-week follow-up reported being satisfied or very satisfied with services received (pg. 24, Table 15). High satisfaction of services remained at 12-week follow-up as well. When asked about the likelihood to recommend TBH services to another person, 99.6% of callers at 4

¹ Nutrition, Physical Activity and Obesity Data, Trends and Maps web site. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity and Obesity, Atlanta, GA, 2015. Available at <http://www.cdc.gov/nccdphp/DNPAO/index.html>.

weeks and 99.8% of callers at 8 weeks reported that they were likely to refer someone else to the hotline (pg. 24, Table 15).

Clients are welcome to call the hotline any time they need support, regardless of language barriers. An auto attendant greets callers in both English and Spanish. Interpretive services are available for more than 200 languages. Special operators are available to assist hearing-impaired callers.

Data Limitations

TBH understands and balances the need to provide an important service as well as the need to collect data for evaluation. TBH staff attempt to capture complete information from all of its callers. However, missing data may be present due to TBH's priority to high quality service, repeat callers, or non-response from a caller. Also, TBH is available to a wide range of individuals who may seek breastfeeding support, so some questions may not be applicable to all callers.

For the 2nd and 3rd quarterly reports of FY16 data are incomplete; there were 53 calls that were unreported. This is due to the data being analyzed prior to submission of all call reports in to iCarol. Therefore 2nd and 3rd quarter data within this annual report do not match what was previously stated in the quarterly reports. To avoid this situation moving forward, TBH will send monthly reminders to all staff to complete and submit all call reports by the end of each month.

Introduction

Breastfeeding is widely accepted as an effective strategy to promote positive health outcomes for both mothers and their babies. Despite growing data on these benefits, 27.4% of babies born in Tennessee in 2012 were never breastfed, according to the Centers for Disease Control and Prevention's most recent National Immunization Survey². By the time their baby reached 6 months of age, the proportion of Tennessee mothers continuing to breastfeed, decreased from 72.6% to 43.1%. Tennessee rates for breastfeeding initiation and six months duration are lower than Healthy People 2020's goal of 81.9% and 60.6%, respectively.

This report was created to examine how the TBH is currently fostering the healthy development of children by promoting and supporting the practice of breastfeeding in Tennessee. By addressing common barriers to breastfeeding in the state, the hotline reinforces the national goal of higher breastfeeding rates, over longer periods of time. Prevalent barriers to breastfeeding include³:

- Lack of knowledge
- Lactation problems
- Poor family and social support
- Social norms
- Embarrassment
- Employment and child care
- Health services

² Centers for Disease Control and Prevention National Immunization Survey (NIS), 2012 births. Centers for Disease Control and Prevention, 2014 Breastfeeding Report Card

³ U.S. Department of Health and Human Services. Executive Summary: The Surgeon General's Call to Action to Support Breastfeeding. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; January 20, 2011.

The TBH addresses these obstacles in a multifaceted approach designed around the individual needs of each client. The primary medium for doing so is through International Board Certified Lactation Consultants (IBCLC) and/or Certified Lactation Counselors (CLC). These lactation professionals answer questions and provide information about:

- Inadequate milk production
- Nursing rejection by baby
- Breast or nipple pain
- Medications and breastfeeding
- Working and breastfeeding
- Breast pumps and rentals
- Breastfeeding in public
- Tennessee laws that relate to breastfeeding
- Weaning
- State-approved online breastfeeding support groups
- State-approved online breastfeeding resource material

The topics of information covered by the lactation professionals acknowledge the barriers to breastfeeding experienced by women nationally.

Caller Demographics

The target population of the TBH includes nursing mothers, their families and partners, expectant parents, and health care providers. During Year 3, 78.2% of the callers were white, 18.1% were black, and 2.5% identified as Asian, American Indian or Alaskan Native, or native Hawaiian/Pacific Islander. About 1% of callers were of multiple or mixed race (pg. 17, Table 9B). According to the United States Census Bureau, 78% of Tennessee residents are white, 16.8% are black, and 1.9% are Asian, American Indian or Alaskan Native, or native Hawaiian/Pacific Islander. Close to 2% of Tennessee residents are of multiple or mixed race.⁴ Hispanic women comprised 5.5% of the callers for Year 3 (pg. 17, Table 9C). When examining age, the hotline received the highest proportion of calls (41.5%) from callers between the ages of 26 and 30 (pg. 16, Table 9A).

Notable Findings

Call volume for the TBH increased about 20% overall from Year 2 to Year 3. Call volume was an average of 477 calls a month, reaching record high call volume in March 2016 with 538 calls. While hospitals are still the most common referral source, online search engines like Google continue to direct many callers to the hotline. TBH continues to receive a huge influx of out of state callers: 15% of calls to the TBH in Year 3 were from out of state callers, including callers residing in states with their own 24/7 breastfeeding hotlines. These callers are assisted, and then directed to national resources such as the National Breastfeeding Helpline (available Monday through Friday, 9am to 5pm EST) and the La Leche League International Helpline (available 24/7).

One challenge faced this year was difficulty finding and retaining staff. Due to the nature of the hotline and funding restraints, most TBH workers are PRNs (i.e., “as needed”) and do not always have set hours. Most

⁴ U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates, Accessed: Monday, 1-Aug-2016 9:49:00 EDT

of these PRNs also work full-time jobs, causing scheduling difficulties. This can lead to the PRNs quitting to focus on their full-time jobs, forcing TBH to hire new lactation professionals. The fluctuating staff has caused a strain on the manager's time, having to ensure all shifts are covered even when short-staffed, and having to invest additional time in interviewing, processing, and training new staff. TBH has hired additional lactation professionals in December 2015 and February 2016, and is currently in the process of hiring additional PRNs to cover weekend and holiday shifts.

Another challenge faced in Year 3 is the difficulty in completing follow up calls. Callers can be difficult to reach for follow up, and rarely respond to the voicemail messages left by lactation professionals. To help combat this, TBH implemented a texting follow-up pilot in June 2015 as backup for the follow-up calls. If a caller is non-responsive via traditional voice call, a short text survey is sent to the caller to complete at the caller's leisure. Overall, the text program has been successful; since implementation, TBH has received about 450 text responses. However, there are constraints to the texting program. Currently, data can't be separated into the same 4-, 8- and 12-week reporting structure used for traditional follow-up calls. Therefore, the texting follow-up data are reported separately.

Overall, the hotline continues to be very well-received by callers. About 32% of call volume to the hotline are repeat callers, suggesting that mothers find the information helpful and continue to reach out when they have additional questions. TBH has also had callers seek support with their second baby. Even if the mother has breastfed before, each baby is unique. Breastfeeding another baby can bring different experiences. Finally, feedback from follow-up calls has been overwhelmingly positive. Some individuals have even reached out to the state specifically to express their pleasure that such a service is being offered.

Conferences, Continued Education, and Publications

In Year 3, the TBH had many opportunities throughout the year to attend and present at local, state, and national conferences.

Conferences attended/presented at by hotline staff includes:

- 2015 Tennessee WIC Breastfeeding and Breastfeeding Peer Counselors Conference; Jackson, TN; July 2015
- International Lactation Consultants Association (ILCA) Annual Conference; Washington D.C.; July 2015
- Le Bonheur Newborn Conference; Memphis, TN; January 2016 (TBH poster presented)
- Magnet status site visit at Le Bonheur Children's Hospital; Memphis, TN; February 2016 (TBH poster presented)
- Breastfeeding Strategic Planning Meeting; Nashville, TN; February 2016
- Tennessee Initiative for Perinatal Quality Care (TIPQC) Annual Conference; Franklin, TN; March 2016 (TBH poster presented)
- Le Bonheur Research Day; Memphis, TN; March 2016 (TBH poster presented)
- 2016 Association of Maternal and Child Health Programs (AMCHP) Conference; Washington D.C.; April 2016 (TBH poster presented)
- National WIC Association 2016 Annual Education and Training Conference; Cincinnati, OH; May 2016 (TBH poster presented)
- Breastfeeding Strategic Planning Meeting; Nashville, TN; June 2016 (TBH poster presented)

- Tennessee Hospital Association (THA) Breastfeeding Workshop; Franklin TN; June 2016 (Oral presentation on TBH)
- Memphis Area Breastfeeding Symposium; Memphis, TN; June 2016

For continuing education, TBH's lactation professionals regularly share relevant articles and resources during monthly staff meetings. TBH staff also regularly participates on conference calls with the U.S. Breastfeeding Committee and WIC. In March 2016, the Memphis Area Lactation Consultant Association (MALCA) sponsored a review course for lactation professionals interested in attaining International Board Certified Lactation Consultant (IBCLC) status. Ten TBH staff members, including medical consultant Dr. Allison Stiles, attended the review course. As a result of this and other educational opportunities, the TBH now has 3 additional IBCLCs, along with 7 Certified Lactation Consultants (CLCs).

A concern that was brought up this year was the outbreak of the Zika virus. An update by the Centers for Disease Control and Prevention (CDC), states that, to date, there have been no reports of infants getting the Zika virus via breastfeeding. If any client calls with Zika concerns, they are referred to the CDC website.

In addition to the TBH informational poster created by staff at the Tennessee Health Department (TDH) and Le Bonheur, several other publications promoting the TBH were completed this year. An article about the TBH was published in Le Bonheur's *Physician* magazine (the article can be read here: <http://www.lebonheur.org/for-providers/physician-publications/delivering-on-a-promise/fall-2015/calling-for-support.dot>). In September 2015, the media production team within TDH's Division of Family Health and Wellness created an informational video featuring interviews from staff members and mothers who had benefited from the hotline. The video can be viewed here: https://www.youtube.com/watch?v=ik_UA8wNY_8&feature=youtu.be. In November 2015, the TDH posted an article celebrating the hotline's third year of operation, featuring quotes from callers who had benefited from the service. The article can be read here: <https://www.tn.gov/news/20260>.

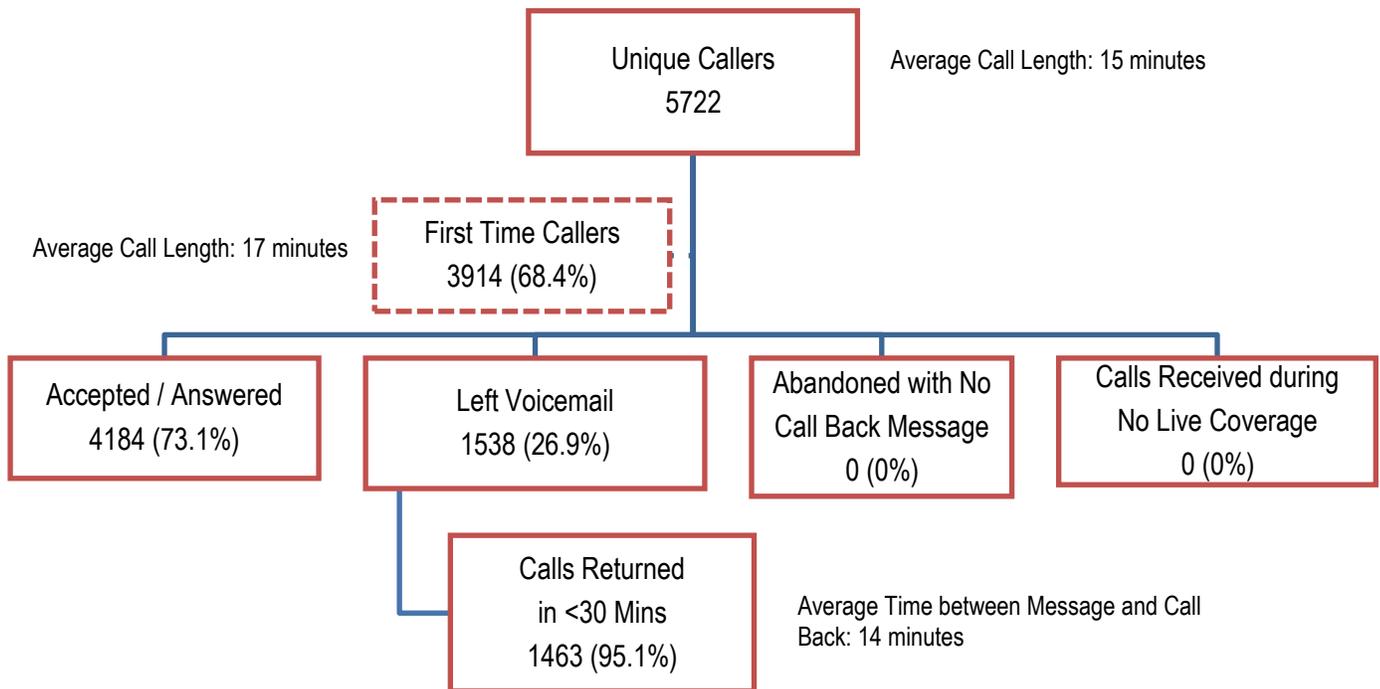
Community Advisory Board Meetings

To keep the community informed about the hotline, the TBH held four Community Advisory Board (CAB) meetings in Year 3. The purpose of these meetings is to update the board about the hotline's successes and challenges, share resources and events, and to open the floor for suggestions. One important role of the CAB in Year 3 was the input on the new reasons for calling categorization. TDH staff worked in collaboration with hotline staff and select CAB members to categorize the multiple reasons for calling into more succinct categories for use in reports and presentations. Finalized categories were presented to the CAB and approved.

Tables and Figures

(1) Call Data

Figure 1. Tennessee Breastfeeding Hotline Call Flow, Year 3 (July 2015 – June 2016)



The flowchart above illustrates calls received to the Tennessee Breastfeeding Hotline from July 2015 through June 2016. For Year 3, the TBH had 5722 unique callers. Of those total unique callers, about 3914 (68.4%) were first time callers to the TBH. Average call length for all calls was 15 minutes; first-time callers were slightly longer (17 minutes).

Of all calls received, 4184 (73.1%) were answered and accepted live by TBH staff and 1538 (26.9%) callers left a voicemail for TBH staff. About 95% of calls were returned within 30 minutes of initial voicemail.

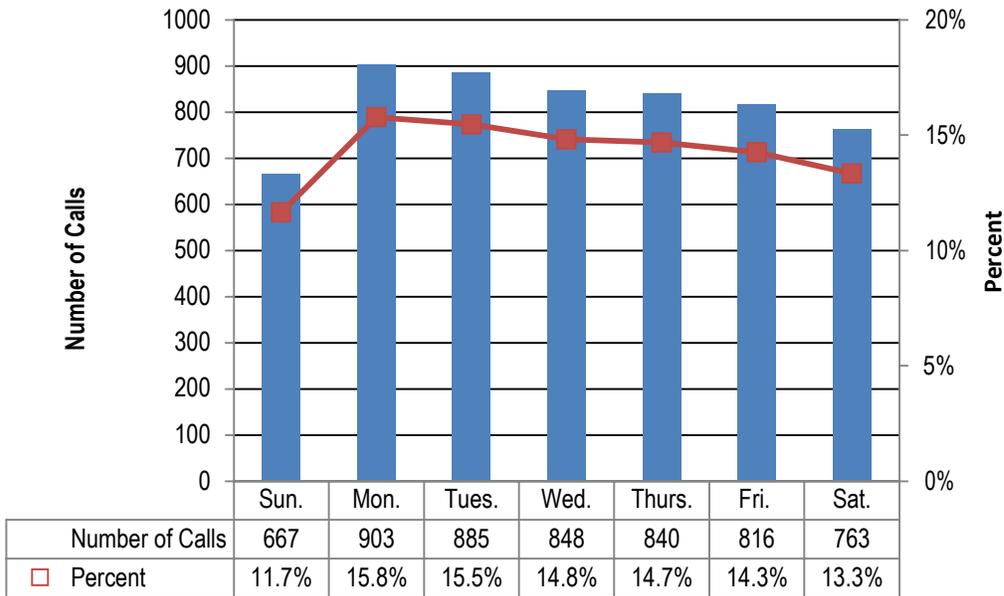
(2) Call Volume & Time

Table 2A. Call Volume, by Time of Day (N=5722)

Time of Call	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
12 AM - 7 AM	129	144	116	105	494	8.6%
8 AM - 12 PM	376	360	506	493	1735	30.3%
1 PM - 6 PM	553	547	654	602	2356	41.2%
7 PM - 11 PM	293	286	291	267	1137	19.9%
TOTALS:	1351	1337	1567	1467	5722	100%

During the TBH’s third year, the majority of calls (41.2%) were received between 1 PM and 6 PM. About 72% of calls were received during the traditional workday (8AM – 6 PM).

Figure 2. Call Volume, by Day of Week (N=5772)



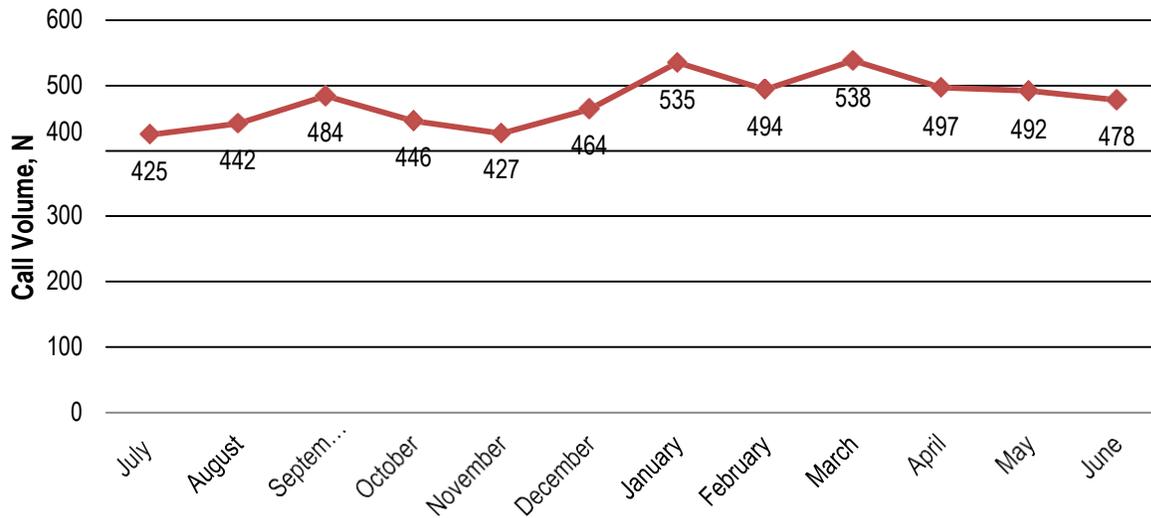
During Year 3, TBH experienced its highest call volume on Mondays (15.8%). Call volume was lowest on Sundays (11.7%).

Table 2B. Call Volume, by Quarter (N=5722)

Month	Number of Calls	Percent
1 st Quarter (July 2015 – September 2015)	1351	23.8%
2 nd Quarter (October 2015 – December 2015)	1337	23.6%
3 rd Quarter (January 2016 – March 2016)	1567	27.6%
4 th Quarter (April 2016 – June 2016)	1467	25.9%
TOTALS:	5722	100%

Call volume within Year 3 was highest in the 3rd quarter. Compared to Year 2, call volume increased by 20.3%.

Figure 2. FY16 Call Volume Trend, by Month



Call volume was highest in March 2016 and lowest in July 2015.

(3) Call Length**Table 3. Number and Proportion of Calls within Year 3, by Call Length (N=5722)**

Length of Call	Year 3 Totals	Year 3 Percent
0-9 minutes	2105	36.8%
10-19 minutes	2453	42.9%
20-29 minutes	860	15.0%
30-39 minutes	217	3.8%
40-49 minutes	56	1.0%
50-59 minutes	16	0.3%
1 hour or more	15	0.3%
TOTALS:	5722	100%

Almost 80% of calls lasted between 0 and 19 minutes during Year 3. Only 15 calls lasted more than an hour. These longer calls are usually due to the certified lactation professional having to utilize a language line and interpreter, which can significantly extend call time.

(4) Referrals**Table 4A. Referral Source Reported by Caller (N=4607)**

Referral Source	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Hospital	856	828	914	757	3355	72.8%
Website/Search Engine	140	155	136	135	566	12.3%
Provider's Office	62	71	102	62	297	6.4%
WIC Clinic	61	54	64	58	237	5.1%
Family or Friend	35	33	20	18	106	2.3%
Brochure	3	5	9	3	20	0.4%
Billboard	3	8	5	3	19	0.4%
Radio	1	0	2	2	5	0.1%
TV	1	1	0	0	2	0.0%
TOTALS:	1162	1155	1252	1038	4607	100%

Missing or not applicable n=1115

During the call, clients were asked how they heard about the TBH. Hospital was the most common referral source, referring 71.7% of callers, followed by information found on a website or via search engine (12.3%).

Table 4B. Number and Proportion of Callers Referred to Provider by the Hotline (N=4063)

Referral Status	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Referred to own provider	145	155	116	141	557	13.7%
Referred to other provider in the vicinity	3	14	2	2	21	0.5%
No referral given	45	720	1426	1294	3485	85.8%
TOTALS:	193	889	1544	1437	4063	100%

Missing or not applicable n=1659

The TBH captured information about whether the caller was referred to a provider for their issue. Overall, 14.2% of callers were referred to a provider, predominantly their own.

Table 4C. Number and Proportion of Callers Referred for Immediate Medical Attention (N=5445)

Medical Reference Given	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
No	1185	1220	1496	1395	5296	97.3%
Yes	51	37	25	36	149	2.7%
TOTALS:	1236	1257	1521	1431	5445	100%

Missing or not applicable n=277

In Year 3, 149 (2.7%) callers were advised by the certified lactation professionals to seek immediate medical attention. Reasons that the mother would have been advised could include if the mother had symptoms of mastitis or a yeast infection, or any issue above and beyond the scope of practice.

Table 4D. Number and Proportion of Callers Referred to a Local Lactation Professional (N=5277)

Referred to a Lactation Specialist	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
No	1114	1076	1292	1186	4668	88.5%
Yes	124	159	151	175	609	11.5%
TOTALS:	1238	1235	1443	1361	5277	100%

Missing or not applicable n=445

During Year 3, the TBH advised 609 (11.5%) of callers to seek out a local lactation professional.

(5) First Time or Repeat Caller**Table 5. TBH Caller by Call Type (N=5722)**

Caller Type	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
First Time	930	924	1021	1039	3914	68.4%
Repeat Caller	421	413	546	428	1808	31.6%
TOTALS:	1351	1337	1567	1467	5722	100%

The majority (68.4%) of calls received were from first time callers.

(6) Interpretive Services**Table 6. Use of Interpretive Services (N=5722)**

Interpretive Services	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Not Used	1331	1316	1542	1449	5638	98.5%
Used	20	21	25	18	84	1.5%
TOTALS:	1351	1337	1567	1467	5722	100%

Close to 2% of callers required interpretive services. Most interpretive services utilized in Year 3 were for Spanish-speaking callers, although TBH also utilized translators for Chinese and Arabic callers.

(7) Caller Location**Table 7. Number and Proportion of Calls, by TN Department of Health Regions (N=4846)**

Region	Total Calls	Percent
Shelby	1082	22.3%
Davidson	970	20.0%
Mid-Cumberland	926	19.1%
Knox	316	6.5%
East	259	5.3%
South Central	249	5.1%
Hamilton	238	4.9%
Upper Cumberland	194	4.0%
Southeast	121	2.5%
Sullivan	121	2.5%
West	120	2.5%
Northeast	119	2.5%
Northwest	80	1.7%
Madison	51	1.1%
	4846	100%

Missing n=58

The table above depicts call volume by the Tennessee Department of Health regions during Year 3. There were a total of 4,904 (85.7%) calls from Tennessee residents. Of the Tennessee residents who reported a county of residence, approximately 61% of calls to the TBH were from the Shelby, Davidson, and Mid-Cumberland regions.

Figure 3. Call Volume, by Caller's County of Residence, Year 3

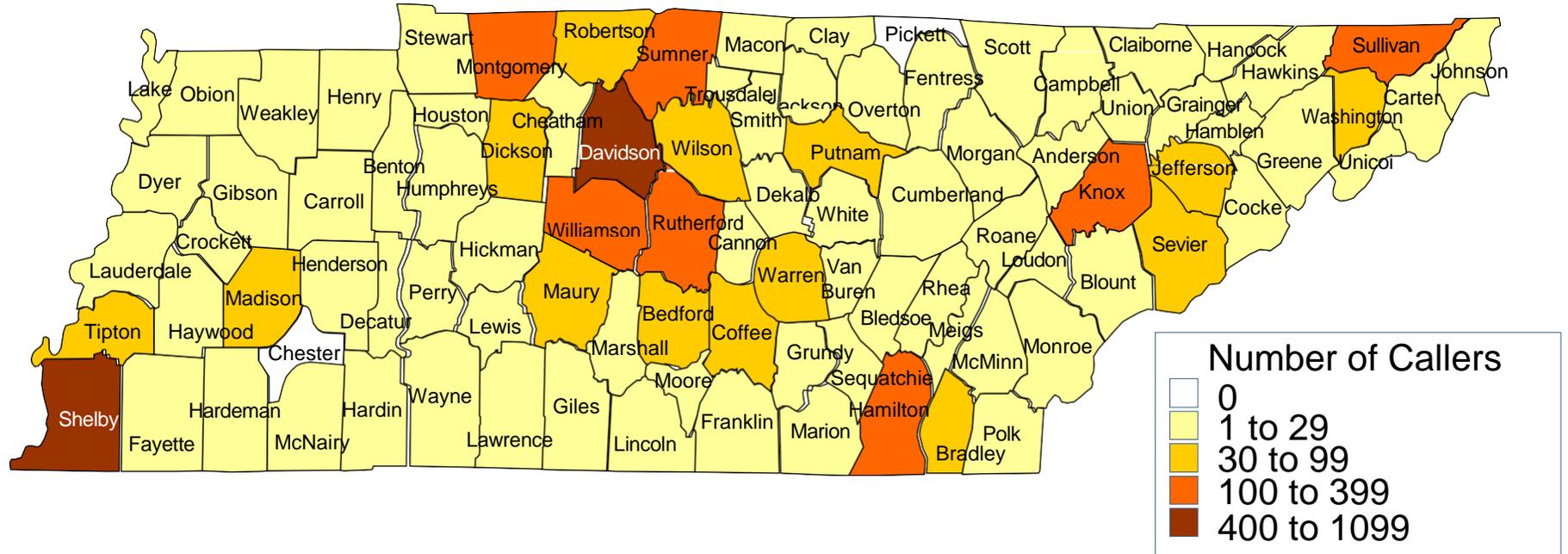
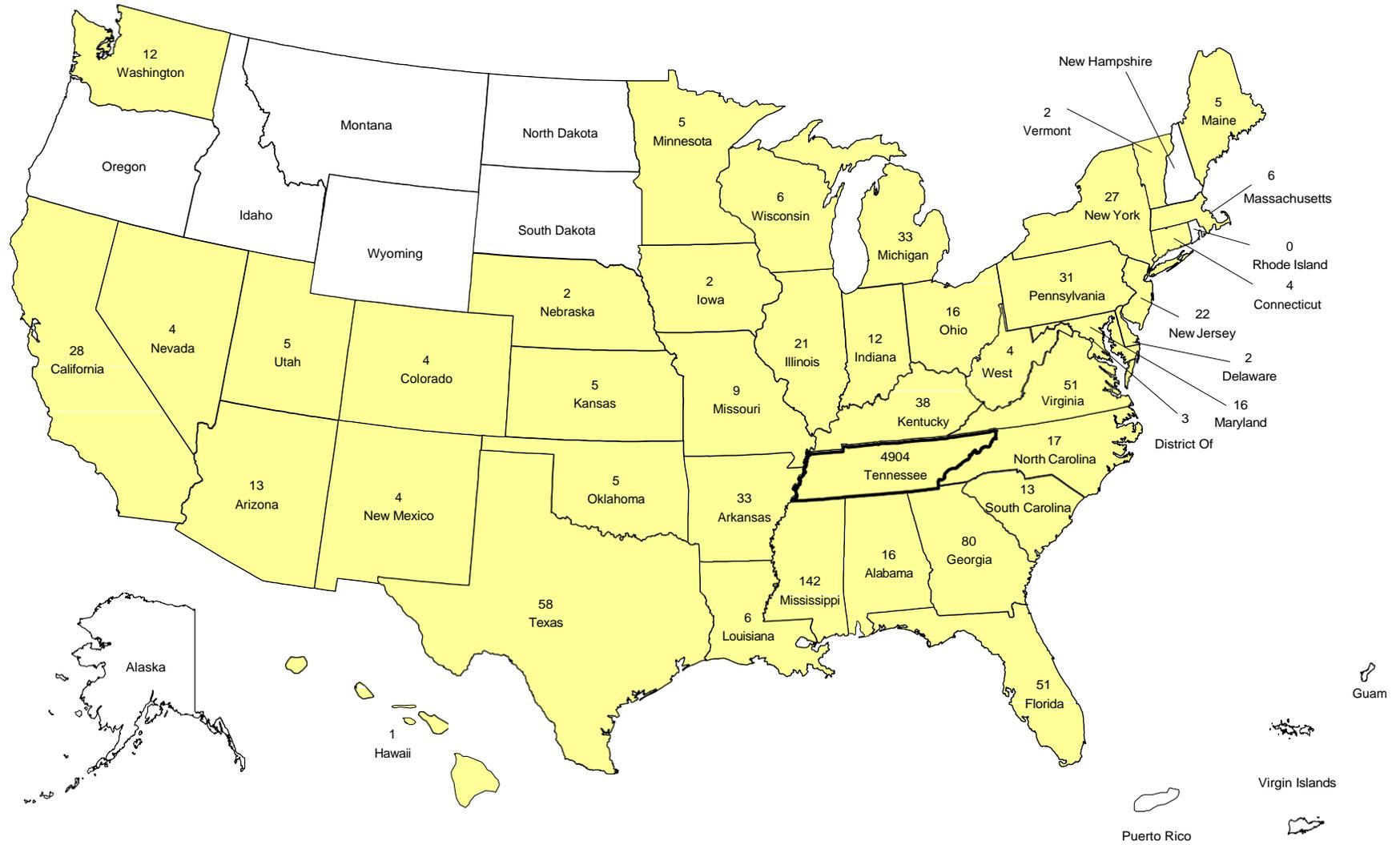


Figure 4. Call Volume, by Caller's State of Residence, Year 3



Overall, TBH received calls from 355 unique counties across 41 states.

(8) Caller's Relationship to Mother

Table 8. Number and Proportion of Calls, by Caller's Relationship to Mother (N=5565)

Relationship to Mother	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Self	1256	1239	1447	1330	5272	94.7%
Spouse or partner	42	42	41	42	167	3.0%
Family or household member	20	19	29	24	92	1.7%
Healthcare provider	0	7	17	10	34	0.6%
TOTALS:	1318	1307	1534	1406	5565	100%

Not applicable n=157

During Year 3, the majority (94.7%) of callers to the TBH were the mothers.

(9) Maternal Age, Race, and Ethnicity

Table 9A. Number and Proportion of Calls, by Maternal Age (N=4272)

Maternal Age	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
< 15	0	0	2	0	2	0.0%
15 - 17	4	8	4	4	20	0.5%
18 - 20	49	38	43	38	168	3.9%
21 - 25	223	245	260	183	911	21.3%
26 - 30	491	461	469	352	1773	41.5%
31 - 35	280	248	311	234	1073	25.1%
36 - 40	70	73	78	56	277	6.5%
41 - 45	7	9	13	11	40	0.9%
> 46	5	0	2	1	8	0.2%
TOTALS:	1129	1082	1182	879	4272	100%

Missing or not applicable n=1450

During Year 3, call volume was highest (41.5%) among mothers between 26 and 30 years.

Table 9B. Number and Proportion of Calls, by Maternal Race (N=4299)

Maternal Race	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
White	849	830	928	756	3363	78.2%
Black	219	198	189	171	777	18.1%
Asian	20	15	22	14	71	1.7%
Multiple Races	10	9	16	21	56	1.3%
Native Hawaiian/Pacific Islander	6	4	4	7	21	0.5%
American Indian/Alaskan Native	1	2	0	8	11	0.3%
TOTALS:	1105	1058	1159	977	4299	100%

Missing or not applicable n=1423

TBH callers were asked to report maternal race during initial call. Of those who reported race, 78.2% were white, followed by black (18.1%).

Table 9C. Number and Proportion of Calls, by Maternal Ethnicity (N=4856)

Ethnicity	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Not Hispanic	1120	1085	1267	1119	4591	94.5%
Hispanic	61	57	75	72	265	5.5%
TOTALS:	1181	1142	1342	1191	4856	100%

Not applicable n=866

Mother's ethnicity was reported for 4856 (84.9%) calls in Year 3. Of those with ethnicity documented, 5.5% of callers identified as Hispanic/Latina.

(10) Mother's Pregnancy History**Table 10A. Number and Proportion of Calls, by Caller's Pregnancy History (N=2258)**

Number of Prior Pregnancies	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
1	358	420	412	225	1415	62.7%
2	127	144	137	124	532	23.6%
3	50	57	52	31	190	8.4%
4	21	18	16	14	69	3.1%
5	7	8	6	8	29	1.3%
6	4	6	4	0	14	0.6%
7	1	1	1	1	4	0.2%
8	1	0	0	0	1	0.0%
9	0	0	1	0	1	0.0%
10 +	1	1	0	1	3	0.1%
TOTALS	570	655	629	404	2258	100%

Missing or not applicable n=3464

Pregnancy history was captured for 39.5% of callers. Of those responding, 62.7% women reported one prior pregnancy.

Table 10B. Number and Proportion of Calls, by Prior Live Births (N=2967)

Number of Prior Live Births	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
1	444	527	550	433	1954	65.9%
2	144	170	170	194	678	22.9%
3	50	67	68	53	238	8.0%
4	14	16	17	15	62	2.1%
5	8	5	5	5	23	0.8%
6	3	1	2	1	7	0.2%
7	1	0	0	0	1	0.0%
8	1	0	0	0	1	0.0%
9	1	0	1	0	2	0.1%
10 +	0	0	0	1	1	0.0%
TOTALS:	666	786	813	702	2967	100%

Missing or not applicable n=2755

Table 10B shows the number and proportion of calls by prior live births of the caller. The number of prior live births was documented for 51.9% of callers. During Year 3, about 66% of women had only one previous live birth.

The gestational age categories for this question were changed in late October 2015 as part of the TBH report revisions. Therefore, complete information about infant's gestational age at birth was unavailable for this quarter. For FY16, there were 4,324 (75.6%) callers who reported infant's gestational age at birth. Of those, 305 calls (7.1%) reported delivering prematurely. The two tables below show infant's gestational age at birth with the categories prior to revisions (Table 10C) and the categories after the reporting revisions (Table 10D). The recommended classification of deliveries after 37 weeks of gestation from the American College of Obstetricians and Gynecologists (ACOG)⁵ was used in Table 10D. The categories within Table 10D will be used for subsequent reports.

Table 10C. Number and Proportion of Calls, by Infant's Gestational Age at Birth, Old Categories (N=1770)

Gestational Age	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
< 37 weeks (pre-term)	87	70	78	70	305	17.2%
37-40 weeks (term)	893	361	--	--	1254	70.8%
40+ weeks (post-term)	146	65	--	--	211	11.9%
TOTALS:	1126	496	78	70	1770	100%

-- denotes that category of gestational age was not collected

Table 10D. Number and Proportion of Calls, by Infant's Gestational Age* at Birth, New Categories (N=2859)

Gestational Age	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
< 37 weeks (pre-term)	87	70	78	70	305	10.7%
37 to <39 weeks (early term)	--	171	289	161	621	21.7%
39 to <41 weeks (full term)	--	376	740	656	1772	61.9%
41 to <42 weeks (late term)	--	27	56	73	156	5.5%
> 42 weeks (post term)	--	0	2	3	5	0.2%
TOTALS:	87	644	1165	963	2859	100%

*Recommended classifications from American College of Obstetricians and Gynecologists --

-- denotes that category of gestational age was not collected

⁵ Definition of term pregnancy. Committee Opinion No. 579. American College of Obstetricians and Gynecologists. Obstet Gynecol 2013; 122:1139-40.

(11) Baby's Birth Information**Table 11A. Number and Proportion of Calls, by Infant's Age during Initial Call (N=4422)**

Age of Infant	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
< 1 week	294	277	277	288	1136	25.7%
1 week - < 1 month	298	262	318	255	1133	25.6%
1 - < 3 months	222	222	255	197	896	20.3%
3 - < 6 months	151	160	199	142	652	14.7%
6 - < 9 months	49	77	80	75	281	6.4%
9 - < 12 months	36	32	45	40	153	3.5%
12 - 18 months	31	37	32	31	131	3.0%
19 - 24 months	11	7	13	9	40	0.9%
TOTALS:	1092	1074	1219	1037	4422	100%

Missing or not applicable n=1300

Callers were asked to indicate the age of their infant during initial call to the TBH. More than half (51.3%) of calls were made when the baby was less than 1 month old.

Table 11B. Number and Proportion of Calls, by Delivery Method (N=2256)

Delivery Method	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Vaginal	474	426	426	338	1664	73.8%
Cesarean	154	143	153	142	592	26.2%
TOTALS:	628	569	579	480	2256	100%

Missing or not applicable n=3466

Table 11B shows the number and proportion of calls by delivery method during Year 3. Nearly three-quarters (73.8%) of women indicated that they had a vaginal delivery. Around 30 women who called in Year 3 were pregnant at time of the call (delivery method recorded as 'not yet born'). These instances were documented but were excluded with regard to the table above.

(12) Feeding Information**Table 12A. Number and Proportion of Calls, by Breastfeeding Status (N=2744)**

Breastfeeding Status	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Breastfeeding exclusively	428	390	383	303	1504	54.8%
Breastfeeding with supplemental nutrition	170	164	153	140	627	22.8%
Both breastfeeding and pumping	86	114	157	102	459	16.7%
Pumping exclusively	32	32	52	38	154	5.6%
TOTALS:	716	700	745	583	2744	100%

Missing n=2978

TBH collected information about the breastfeeding status of mothers during initial call. Breastfeeding status was reported for 2,744 (48.0%) callers. Of the mothers who disclosed their breastfeeding status, over half (54.8%) were breastfeeding exclusively.

Table 12B. Number and Proportion of Callers Breastfeeding within 24 Hours of Delivery (N=2193)

Breastfeeding within 24 Hours?	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Yes	562	562	551	418	2093	95.4%
No	33	27	17	23	100	4.6%
TOTALS:	595	589	568	441	2193	100%

Missing or not applicable n=3529

Table 12B shows number and proportion of callers who indicated breastfeeding within 24 hours of delivery. Of the callers who responded, 95.4% of mothers had begun breastfeeding their baby within 24 hours of birth.

(13) Reasons for Calling

Table 13A. Number and Proportion of Calls, by Primary Reason for Call (N=5169)

Reasons for Calling	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Breast-Related Problems	257	243	302	285	1087	21.0%
Maternal Health Behaviors	158	197	262	230	847	16.4%
Lactation or Milk Concerns	168	169	202	201	740	14.3%
Breastfeeding Management	144	102	159	147	552	10.7%
Infant Health Concerns	120	125	155	96	496	9.6%
Milk Expression	85	110	97	119	411	8.0%
Breastfeeding Technique	88	74	82	103	347	6.7%
Infant Health Behaviors	79	77	69	66	291	5.6%
Maternal Health Concerns	27	49	46	42	164	3.2%
Medical Condition (Infant)	27	18	27	19	91	1.8%
Breastfeeding Support	20	19	16	30	85	1.6%
Supplemental Nutrition	15	5	17	21	58	1.1%
TOTALS:	1188	1188	1434	1359	5169	100%

Missing n=553

Callers were asked to indicate their primary reason for calling the TBH, which TBH categorized into the reasons above (please see Appendix A for classification of individual reasons). During Year 3, 21% of calls were regarding breast-related problems (e.g. breast or nipple pain, breast engorgement, or sore nipples) followed by maternal health behaviors (16.4%). The top five individual reasons for calling the TBH in Year 3 were: medications and breastfeeding, not making enough milk, breast/nipple pain, breast engorgement, and baby feeding too much/too little.

Table 13B. Number and Proportion of Calls: Top 10 Additional Reasons for Calling (N=458)

Top Additional Reasons for Calling	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Not making enough milk	31	17	16	13	77	16.8%
Breastfeeding technique	33	15	6	15	69	15.1%
Breast engorgement	14	11	13	21	59	12.9%
Pumping	5	3	14	21	43	9.4%
Working and breastfeeding	20	8	8	7	43	9.4%
Breast or nipple pain	7	8	11	12	38	8.3%
Medications and breastfeeding	6	11	8	11	36	7.9%
Sore nipples	11	8	9	7	35	7.6%
Overactive letdown/too much milk	10	8	9	5	32	7.0%
Milk storage	9	9	6	2	26	5.7%
TOTALS:	146	98	100	114	458	100%

In addition to the primary reason for calling, lactation professionals noted additional questions that were brought up during the course of the call. Many mothers did not bring up additional questions. However, top additional concerns were related to not making enough milk (16.8%) and breastfeeding technique (15.1%).

(14) Outcomes at Follow-Up

At the end of each initial call to the TBH, the lactation professionals asked the callers if they intended to continue to breastfeed (Results in Table 14A). Continuation of breastfeeding was also asked during the 4-week, 8-week, and 12-week follow up calls (Table 14B).

Also, the lactation professionals asked the caller if they felt more comfortable and/or confident with breastfeeding by the end of the initial call (pg. 23, Table 14D). Similar to the question regarding the continuation of breastfeeding, caller confidence and comfort was also assessed by TBH staff at 4-week, 8-week, and 12-week follow-up calls (pg. 24, Table 14E).

Table 14A. Number and Proportion of Calls, by Intention to Continue Breastfeeding (N=5047)

Intention to Continue Breastfeeding	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Yes	1158	1162	1355	1258	4933	97.7%
No	40	23	27	24	114	2.3%
TOTALS:	1198	1185	1382	1282	5047	100%

Not applicable n =675

When asked about the intention to continue breastfeeding, 97.7% of callers intended to continue breastfeeding at the end of the initial call.

Table 14B. Caller's Breastfeeding Status, by Follow-Up Period

Follow-Up Period	Calls Attempted	Not Reached	Reached N (%)	Answered Question	Still Breastfeeding N (%)
4 week	3527	2573	954 (27%)	871	756 (86.8%)
8 week	3028	2269	759 (25.1%)	704	592 (84.1%)
12 week	2630	2051	579 (22%)	545	429 (78.7%)

Notes: Reached = # of callers reached out of # of calls attempted

Still breastfeeding = # of callers still breastfeeding out of # of callers who answered the question

During Year 3, TBH attempted a total of 9,185 calls to clients to follow-up about breastfeeding status; about 25% of callers were reached for follow-up.

At the 4-week follow-up, 86.8% of callers were still breastfeeding. This proportion drops 3.2% for callers during the 8-week follow-up (84.1%). Reasons reported by the mothers who ceased breastfeeding during the weeks in between the initial call and the follow up included lack of support, mother returning to work, weaning, illnesses (for both mother and baby), medication, and not making enough milk.

Table 14C. Breastfeeding: Exclusive or Supplemental, by Follow-Up Period

Follow-Up Period	Number Still Breastfeeding (from Table 14B)	Answered Question	Supplemented N (%)	Exclusive N (%)
4 week	756	709	142 (20.0%)	567 (80.0%)
8 week	592	574	125 (21.8%)	449 (78.2%)
12 week	429	440	113 (25.7%)	327 (74.3%)

Callers who indicated that they were still breastfeeding during the follow-up call (Table 14B) were then asked if they were breastfeeding exclusively or with supplemental nutrition.

Of the callers who indicated that they were still breastfeeding, more mothers were exclusively breastfeeding their infants during each follow-up period, though supplemented feedings did rise during each follow up period.

Table 14D. Number and Proportion of Callers Confident or Comfortable Breastfeeding at End of Initial Call (N=4978)

Comfort with Breastfeeding	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year 3 Totals	Year 3 Percent
Yes	1167	1156	1354	1256	4933	99.1%
No	10	9	14	12	45	0.9%
TOTALS:	1177	1165	1368	1268	4978	100%

Not applicable n=744

TBH staff reported that almost all (99.1%) callers had increased comfort and confidence with breastfeeding by the end of their interaction.

Table 14E. Caller’s Confidence and Comfort with Breastfeeding, by Follow-Up Period

Follow-Up Period	Calls Attempted	Not Reached	Reached N (%)	Answered Question	Improved N (%)	Did Not Improve N (%)
4 week	3527	2573	954 (27.0%)	637	593 (93.1%)	44 (6.9%)
8 week	3028	2269	759 (25.1%)	468	439 (93.8%)	29 (6.2%)
12 week	2630	2051	579 (22.0%)	369	340 (92.1%)	29 (7.9%)

Notes: Reached = # of callers reached out of # of calls attempted;
 Improved= # of callers with improved confidence or confidence breastfeeding out of # of callers who answered the question

At the 4-week follow-up, 93.1% of callers reported increased confidence and comfort with breastfeeding. Similar rates of confidence and comfort remained for all three follow-up periods.

(15) Client Satisfaction with Services

Clients rated TBH services at different intervals: 4 weeks, 8 weeks, and 12 weeks after services had been rendered. Callers were asked to rate their overall satisfaction with hotline services and indicate their likelihood to recommend TBH services to another person.

Table 15. Caller’s Satisfaction and Likelihood to Recommend the TN Breastfeeding Hotline, by Follow-Up Period

Follow-Up Period	Calls Attempted	Not Reached	Reached N (%)	Satisfaction with TBH		Recommend TBH	
				Answered Question	Satisfied N (%)	Answered Question	Likely to Recommend N (%)
4 week	3527	2573	954 (27%)	784	778 (99.2%)	783	780 (99.6%)
8 week	3028	2269	759 (25.1%)	617	616 (99.8%)	604	603 (99.8%)
12 week	2630	2051	579 (22.0%)	505	503 (99.6%)	489	489 (100%)

Notes: Reached = # of callers reached out of # of calls attempted;
 Satisfied = # of callers satisfied or very satisfied with TBH services out of # of callers who answered the question
 Likely to Recommend = # of callers likely or very likely to recommend TBH services out of # of callers who answered the question

Callers were asked to rate their level of satisfaction of TBH from 1 (very dissatisfied) to 5 (very satisfied). Overall, clients were satisfied with TBH services during each follow-up period (range: 99.2% -99.8%). During each follow-up, callers were also asked to indicate their likelihood to recommend the TBH to others (1 - very unlikely to 5 - very likely). Overall, callers were likely to recommend TBH services to another person (range: 99.6% - 100%).

(16) Texting Follow-Up

In June 2015, TBH implemented a texting follow-up program. Texts were sent only after a member of the TBH staff was unsuccessful in reaching the caller via voice call. Texting follow-up consisted of the following message, which was personalized for each caller contacted to include the caller's name:

“Thank you for taking the time to answer a few questions about your experience with the Tennessee Breastfeeding Hotline. Remember, if you have any questions, feel free to call us at any time at 1-855-423-6667 and we would be happy to help you.”

Results are currently not separated by weeks due to restraints by the texting platform; the TBH is working with iCarol to figure out a solution to this. Furthermore, not all questions asked during the traditional follow-up method were available for texting follow-up. Currently, only information pertaining to breastfeeding status, satisfaction of services, and level of comfort/confidence breastfeeding was captured.

Table 16A. Texting Follow-Up: Caller's Breastfeeding Status (N=439)

Follow-Up Method	Texts Received	Yes N (%)	No N (%)
Text	439	394 (89.7%)	45 (10.3%)

During Year 3, TBH received 439 follow-up texts regarding breastfeeding status. Of those reached, 89.7% responded that they were still breastfeeding.

Table 16B. Caller's Satisfaction with TN Breastfeeding Hotline (N=446)

Follow-Up Method	Texts Received	Satisfied N (%)
Text	446	418 (93.7%)

Note: Satisfied = # of callers satisfied or very satisfied with TBH services

TBH received 446 responses regarding caller's satisfaction with services provided. 93.7% responded that they were satisfied with services received.

Table 16C. Caller's Likelihood to Recommend TN Breastfeeding Hotline (N=446)

Follow-Up Method	Texts Received	Likely to Recommend N (%)
Text	446	424 (95.1%)

Note: Likely to Recommend = # of callers likely or very likely to recommend TBH services

TBH received 446 responses with regard to caller's likelihood to recommend the TBH to others. 95.1% indicated that they were likely or very likely to recommend the TBH to another person.

Table 16D. Caller's Increase in Confidence/Comfort with Breastfeeding (N=419)

Follow-Up Method	Texts Received	Yes N (%)	No N (%)
Text	419	375 (89.5%)	44 (10.5%)

TBH received 419 responses with regard to caller's increase in confidence and comfort with breastfeeding. 89.5% indicated that they were more comfortable and confident breastfeeding.

Our Team

Meri Armour – President, Le Bonheur Children’s Hospital
Meri provides oversight over the entire hospital.

Nikki Polis - SVP/Chief Nurse Executive Methodist Le Bonheur Health Care
Nikki provides oversight for all the nurses in the MLH system.

Sharon Harris, MSN, RN – Administrative Director, Le Bonheur Children’s Hospital.
Sharon provides oversight of the Maternal Child Department.

August Marshall, M.A. – Evaluation Coordinator
August updates iCarol survey questions as needed, provides general iCarol support to the TBH staff, analyzes hotline data, and helps write and submit quarterly and annual reports.

Cathy Marcinko, M.A. -- Grant Development Coordinator
Cathy assists division departments in researching, developing and submitting funding proposals, and with other assignments, as needed. She has a Masters’ Degrees in Community Planning and in Teaching, and has a BA in Art History.

Christina M. Underhill, Ph.D. -- Program Evaluation Manager for the LCHWB Division
Christina coordinated the creation of the TBH quarterly report format and assisted with the development of the TBH quality improvement plan. She advises on the collection of outcome measures and ensures proper data management.

Gary R. Cook, LCSW -- Director of LCHWB Grant Administration Department
Gary co-authored the TN Breastfeeding Hotline Proposal. He provides contract related and fiscal oversight of the project.

Nicole Gottier, M.A. -- Grant Reimbursement Supervisor
Nicole tracks monthly expenses for the program for correctness, as well as alignment with budget projections, and creates and submits monthly invoices to the State.

Sandra Madubonwu MSN, RN, CLC – Director, Maternal Child Department.
Sandra was involved in the proposal process for the TN Breastfeeding Hotline and played an instrumental role in implementing the program. She provides administrative oversight to all the programs within the Maternal Child Department, including the TBH.

Helen Scott, RN/IBCLC/RLC -- Project Coordinator of the Tennessee Breastfeeding Hotline
Helen coordinates the staff and ensures that the Hotline is working to meet identified purposes and goals.

Medical Lactation Consultant

Dr. Allison Stiles, Internal Medicine & Pediatrics, MD, IBCLC, RLC

Lactation Consultants and Counselors

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Kristin L. Gentry, Tennessee Department of Health
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Lauren Robinson, Le Bonheur Community Health and Well-Being

APPENDIX A. Categorization of the Primary Reason for Calling the Tennessee Breastfeeding Hotline

CATEGORIES	REASONS / ISSUES
Supplemental Nutrition: Issues related to complementing breastfeeding with expressed human milk or some other fluid or food	<ul style="list-style-type: none"> • Vitamin D supplementation • Supplemental feeding
Milk Expression: Issues related to taking breastmilk from the mother’s breast without the baby needing to suckle.	<ul style="list-style-type: none"> • Breast pumps and rentals • Exclusive pumping • Milk storage
Breast-Related Problems: Issues or problems mother can experience that are commonly associated with breastfeeding	<ul style="list-style-type: none"> • Breast mass • Breast engorgement • Sore nipples • Breast or nipple pain • Nipple abnormality
Breastfeeding Management: Issues related to the process of maintaining or integrating breastfeeding within a mother’s routine or circumstances	<ul style="list-style-type: none"> • Tandem nursing • Breastfeeding while pregnant • Working and breastfeeding • Managing multiple breastfeeding babies • Weaning • Bottle feeding • Returning to work/school • Baby feeding to much / too little • Breastfeeding device/equipment (e.g. nipple shields)
Breastfeeding Support: Resources, guidance, or laws that can assist with breastfeeding	<ul style="list-style-type: none"> • Public breastfeeding • Donor milk • TN breastfeeding laws • Seeking resources • Pre-birth information / counseling
Breastfeeding Technique: Issues related to mother’s breastfeeding skill	<ul style="list-style-type: none"> • Inability to latch • Breastfeeding technique • Clicking / Noisy nursing
Medical Condition (Infant): Issues related to an infant’s disease, disorder, illness, or complication diagnosed by a health care provider that can impact mother’s ability to breastfeed	<ul style="list-style-type: none"> • Feeding baby with hypotonia • Feeding baby with Down Syndrome • Feeding baby with cleft lip / palate • Jaundice • Late preterm newborn • Managing premature infant breastfeeding • Tongue-tie • Allergies • Baby spitting up (reflux)
Infant Health Behaviors: Issues related to infant’s	<ul style="list-style-type: none"> • Baby biting breast

actions that can impact mother's ability to breastfeed	<ul style="list-style-type: none"> • Baby refusing to nurse • Distraction during breastfeeding • Sleepiness
Maternal Health Behaviors: Issues related to the practices (choices), of the mother that can impact her overall health and ability to breastfeed	<ul style="list-style-type: none"> • Alcohol use • Substance abuse / Illicit drug use • Smoking / Smoking cessation • Exercise and breastfeeding • Diet • Medications and breastfeeding
Lactation or Milk Concerns: Issues related to mother's anxiety or worry about milk production or quality	<ul style="list-style-type: none"> • Overactive letdown / too much milk • Not making enough milk • Re-lactation • Adoption • Color change in milk
Infant Health Concerns: Issues related to mother's anxiety or worry about infant's health state or condition	<ul style="list-style-type: none"> • Fussiness / Colic • Gassiness • Appropriate feeding by age / weight • Abnormal stools / voids • Lethargy • Weight concerns • Sick baby • Constipation
Maternal Health Concerns: Issues related to mother's anxiety or worry about her own health state or condition	<ul style="list-style-type: none"> • Maternal postpartum vaginal bleeding • Menstruation / Return of menstrual cycle • Maternal sickness • Maternal postpartum depression
Other: An issue indicated by mother that is other than what is currently listed	<ul style="list-style-type: none"> • Specify